

AMENDMENTS TO THE CLAIMS:

A complete listing of the claims is set forth below. Please amend the claims as shown below.

1.-6. (Cancelled)

7. (Currently Amended) A computer-implemented system for redistributing a part, comprising one or more processing units operable to execute one or more software components to:

- define a plurality of locations;
- establish an actual inventory of a plurality of parts among the locations;
- establish a desired distribution of the parts among the locations;
- determine a demand for the parts at each location using the actual inventory and the desired distribution;

- add a dummy location;

- determine a plurality of paths, a path being operable to transfer a part from one location to another location, wherein the plurality of paths include at least one path to the dummy location that is associated with an infinite transfer cost;

- generate a transfer function describing a cost of transferring a plurality of excess parts along the paths; and

- optimize the transfer function to achieve the desired distribution of the parts at minimum cost.

8. (Previously Presented) The system of Claim 7, wherein:

- the transfer function describes the cost being associated with transferring a part along a plurality of alternative paths; and
- the one or more processing units are operable to execute the one or more software components further to optimize the transfer function by minimizing the transfer function.

9. **(Previously Presented)** The system of Claim 7, wherein the one or more processing units are operable to execute the one or more software components further to determine the paths by sending a notification if there is no path between one location and another location.

10. **(Previously Presented)** The system of Claim 7, wherein the one or more processing units are operable to execute the one or more software components further to establish the desired distribution by calculating an optimized distribution of the excess parts among the locations.

11. **(Currently Amended)** The system of Claim 7, wherein the one or more processing units are operable to execute the one or more software components further to add ~~[[a]]~~ the dummy location with an associated demand and ~~[[an]]~~ the infinite transfer cost.

12. **(Previously Presented)** The system of Claim 7, wherein the one or more processing units are operable to execute the one or more software components further to satisfy a constraint requiring that the parts transferred to a location and the parts transferred from the location satisfy the demand for the parts at the location.

13.-20. **(Cancelled)**